IN THE CLAIMS:

The following listing of claims will replace all prior listings of claims in the application.

1. – 2. (Cancelled)

3. (Previously Presented): A method for assembling a plurality of packet fragments into a packet for transmission by network interface circuitry, the method comprising:

determining at the network interface circuitry that received data is a first packet fragment;

determining that the first packet fragment is associated with a first packet;

determining that the first packet fragment has a valid checksum;

storing the first packet fragment in a reserved buffer space in memory corresponding to the first packet;

starting a timer to measure a time period;

sorting the packet fragments in the reserved buffer space based on a fragment number associated with each packet fragment;

determining, at a predetermined time interval, whether any packet fragment associated with the first packet is missing; and

transmitting the first packet from the network interface circuitry over a network to a receiver.

4. (Previously Presented): The method, according to claim 3, wherein at least one packet fragment is missing at the end of the time period, and further comprising the step of clearing the reserved buffer space corresponding to the first packet.

5. (Previously Presented): The method, according to claim 3, wherein no packet fragments are missing at the end of the time period, and further comprising the steps of:

combining each of the packet fragments in the reserved buffer space to generate the first packet;

buffering the first packet in memory accessible by the network interface circuitry;

incrementing a counter of the network interface circuitry;

checking for a connection table entry for the first packet;

responsive to non-existence of the connection table entry, sending the first packet to network interface software for preparing the first packet for the network interface circuitry, the network interface software configured to:

generate an address resolution table (ART) index for an address resolution table entry that stores a media access control (MAC) address and MAC layer attributes,

build the connection table entry, including the ART index,

at least partially process the first packet, and

send the first packet as processed to the network interface circuitry;

forwarding the first packet from the network interface circuitry;

clearing the buffer of the first packet responsive to forwarding the first packet; and

decrementing the counter.

6. (Previously Presented): The method, according to claim 5, wherein the first packet is a Voice Over Internet Protocol formatted packet or a User Datagram Protocol formatted packet.

7. (Previously Presented): The method, according to claim 5, further comprising the step of generating a total count signal from the buffer, wherein the total count signal indicates to the network interface circuitry whether all the packets sent to the network interface software for processing have been at least partially processed.

8. (Previously Presented): The method, according to claim 5, further comprising the step of setting a do not use flag for the connection table entry, wherein the packets subsequent to an initial received packet for a connection and to creation of the connection table entry are sent to the network interface software for processing responsive to the do not use flag being set.

9. (Previously Presented): The method, according to claim 5, wherein the first packet is completely processed by the network interface software.

10. (Previously Presented): The method, according to claim 5, further comprising the step of completing the processing of the first packet with the network interface circuitry.

11. (Previously Presented): A computer readable medium storing instructions for causing a network interface to assemble a plurality of packet fragments into a packet for transmission by a network interface, by performing the steps of:

determining at the network interface that received data comprises a first packet fragment;

determining that the first packet fragment is associated with a first packet;

determining that the first packet fragment has a valid checksum;

storing the first packet fragment in a reserved buffer space in memory corresponding to the first packet;

starting a timer to measure a time period relative to the first packet;

sorting the packet fragments in the reserved buffer space based on a fragment number associated with each of the packet fragments;

determining, at the predetermined time, whether any packet fragment associated with the first packet is missing; and

transmitting the first packet from the network interface over a network to a receiver.

12. (Previously Presented): The computer readable medium, according to claim 11, wherein at least one packet fragment is missing at the end of the time period, and further comprising the step of clearing the reserved buffer space corresponding to the first packet.

13. (Previously Presented): The computer readable medium, according to claim 11, wherein no packet fragments are missing at the end of the time period, and further comprising the steps of:

combining each of the packet fragments in the reserved buffer space to generate the first packet;

buffering the first packet in memory accessible by the network interface circuitry;

incrementing a counter of the network interface circuitry;

checking for a connection table entry for the first packet;

responsive to non-existence of the connection table entry, sending the first packet to network interface software for preparing the first packet for the network interface circuitry, the network interface software configured to:

generate an address resolution table (ART) index for an address resolution table entry that stores a media access control (MAC) address and MAC layer attributes,

build the connection table entry, including the ART index,

at least partially process the first packet, and

send the first packet as processed to the network interface circuitry;

forwarding the first packet from the network interface circuitry;

clearing the buffer of the first packet responsive to forwarding the first packet; and

decrementing the counter.

14. (Previously Presented): The computer readable medium, according to claim 13, further comprising the step of generating a total count signal from the buffer, wherein the total count signal indicates to the network interface circuitry whether all the packets sent to the network interface software for processing have been at least partially processed.

15. (Previously Presented): The computer readable medium, according to claim 13, wherein the first packet is a Voice Over Internet Protocol formatted packet or a User Datagram Protocol formatted packet.

16. (Previously Presented): The computer readable medium, according to claim 13, further comprising the step of setting a do not use flag for the connection table entry,

wherein the packets obtained after creation of the connection table entry are sent to the network interface software responsive to the do not use flag being set.

17. (Previously Presented): The computer readable medium, according to claim 13, wherein the first packet is completely processed by the network interface software.

18. – 22. (Cancelled):

23. (Previously Presented): A system for assembling a plurality of packet fragments into a packet for transmission from a network interface, the system comprising:

a central processing unit;

a system memory coupled to the central processing unit; and

the network interface coupled to the system memory and the central processing unit, the network interface configured to:

determining at the network interface that received data comprises a first packet fragment,

determining that the first packet fragment is associated with a first packet,

determine that the first packet fragment has a valid checksum,

store the first packet fragment in a reserved buffer space in a network interface local memory corresponding to the first packet,

start a timer to measure a time period relative to the first packet,

sort the packet fragments in the reserved buffer space based on a fragment number associated with each of the packet fragments,

determine, at the end of the time period, whether any packet fragment associated with the first packet is missing, and

transmitting the first packet from the network interface.

24. (Previously Presented): The system, according to claim 23, wherein at least one packet fragment is missing at the end of the time period, and the network interface further configured to clear the reserved buffer space corresponding to the first packet.

25. (Previously Presented): The system, according to claim 23, wherein no packet fragments are missing at the end of the time period, and the network interface further configured to:

combine each of the packet fragments in the reserved buffer space to generate the first packet;

buffer the first packet in the system memory accessible by network interface circuitry;

increment a counter of the network interface circuitry;

check for a connection table entry for the first packet;

responsive to non-existence of the connection table entry, send the first packet to network interface software for preparing the first packet for the network interface circuitry, the network interface software configured to:

generate an address resolution table (ART) index for an address resolution table entry that stores a media access control (MAC) address and MAC layer attributes,

build the connection table entry, including the ART index,

at least partially process the first packet, and

send the first packet as processed to the network interface circuitry;

forward the first packet from the network interface circuitry;

clear the buffer of the first packet responsive to forwarding the first packet; and

decrement the counter.

26. (Previously Presented): The system, according to claim 25, wherein the first packet is a Voice Over Internet Protocol formatted packet or a User Datagram Protocol formatted packet.

27. (Previously Presented): The system, according to claim 25, wherein the network interface is further configured to generate a total count signal from the buffer, wherein the total count signal indicates to the network interface circuitry whether all the packets sent to the network interface software for processing have been at least partially processed.

REMARKS

The following is intended as a full and complete response to the Office Action dated July 30, 2008, having a shortened statutory period for response set to expire on October 30, 2008. In this Office Action, claims 3, 4, 11, 12, 23 and 24 are rejected under 35 U.S.C. §103(a) as being unpatentable over Bilic (U.S. 7,050,437) in view Malagrino (U.S. 6,714,985). Claims 5-10, 13-17 and 25-27 are rejected under 35 U.S.C. §103(a) as being unpatentable over Bilic in view of Malagrino and further in view of Robotham (U.S. 6,775,293) and Natanson (U.S. 6,611,525). These rejections are respectfully traversed.

Rejections under 35 U.S.C. §103(a)

Claim 3 recites the limitations of determining that a first packet fragment is associated with a first packet and determining that the first packet fragment has a valid checksum. None of the cited references teaches or suggests these limitations.

The Examiner admits that Malagrino, Robotham and Natanson do not teach or suggest these limitations and relies on the disclosure in Bilic for the relevant teachings. Bilic teaches a technique for reassembling one or more received packets into a frame of data. According to this reference, upon receiving a packet via the network, a processor examines the IP header associated with the packet to determine if the packet is associated with a particular frame. If so, then the processor stores the packet until all the packets associated with that particular frame are received. Once all the packets of the particular frame are received, the processor reassembles the packets into the particular frame. To ensure that the reassembled frame is valid, the processor computes the checksum of the frame and determines whether the computed checksum matches the checksum included in the header of the frame (see Bilic at column 8, lines 48-53).

In the Office Action, the Examiner equates the packets and the frame in Bilic to the claimed first packet fragment and the claimed first packet, respectively. However, importantly, the checksum included in Bilic is computed for the entire frame and not for each packet. In contrast, claim 3 expressly recites determining that the first packet fragment, itself, has a valid checksum. There is simply no teaching or suggestion in